

'Flybus' prototype may be hybrid bus of future

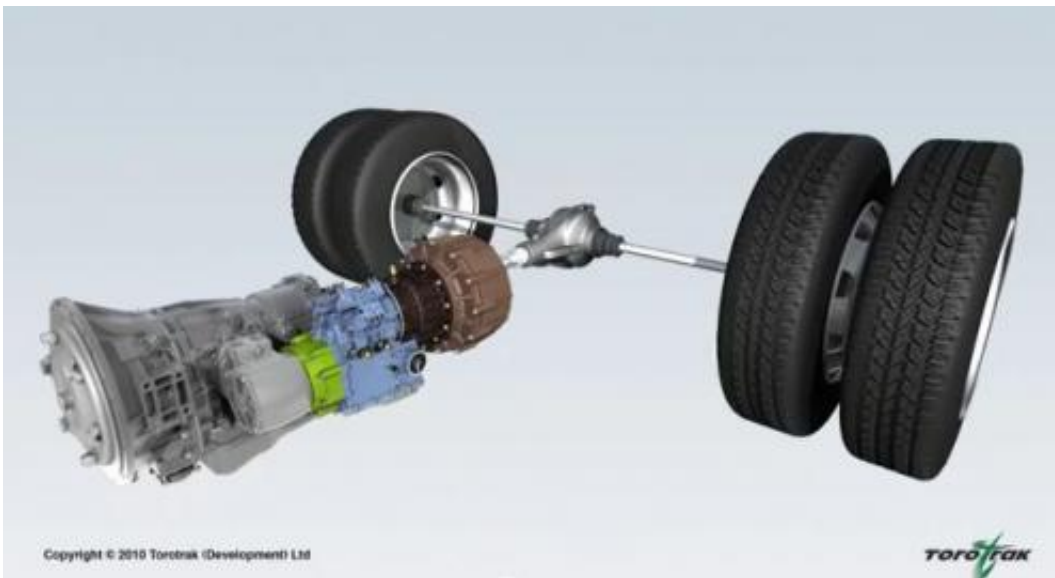
September 8 2011, by Nancy Owano



(PhysOrg.com) -- The "Flybus" prototype bus aims to showcase how hybrid electric buses can be inexpensive, cost efficient and easy on the environment. Reports out this week say that the Flybus is being readied for testing. The consortium of companies that created the prototype will stage a presentation at this year's Low Carbon Vehicle event in the UK, at Rockingham Motor Speedway in Corby, Northamptonshire.

Transportation engineers will want to see how the Flybus rates in a focus on what is next in the evolution of the hybrid bus and solutions that can ease fuel consumption and CO2 emissions. Cost has been a challenge with standard hybrids.

The new Flybus hybrid has taken on cost considerations with a unique energy-saving approach. The bus makes use of the "flywheel" technique demonstrated earlier this year by Porsche in Detroit. The flywheel can feed [energy](#) back into the wheels on the vehicle's acceleration. The technique is praised as a way to generate emissions-free energy. The system takes the kinetic energy that is generated from the braking stops-and starts of a city bus run and sends it back to the vehicle. The team's goal has been to come up with an energy-efficient redistribution process, supported by a continuously variable transmission system.



Key features of the Flybus prototype are a Ricardo Kinergy flywheel as

the medium for energy storage and a Torotrak continuously variable transmission (CVT) which transfers energy to the flywheel. The Ricardo Kinergy flywheel uses low-cost magnetic coupling.

As interesting as the construct is the structure of the group, the Flybus consortium, that came up with the bus hybrid. The consortium is an example of what happens when there is a synergy between government and technologists at different companies who can put pieces of a product engineering puzzle together, drawing on varied areas of expertise, in an innovative way. The collaborative is partly funded by the UK's Technology Strategy Board as part of its Low Carbon Vehicles initiative.

The Flybus consortium would like to see its prototype through the next stages so that bus operators can look forward to less fuel costs and brake wear. The group unites bus maker Optare, engineering consultancy Ricardo, technology specialist Torotrak, and Allison Transmission.

London plans to introduce 90 hybrid buses to service this year. The city has been looking toward hybrid buses for some time. In the 2004 Energy Strategy plan, the Mayor adopted for London the government's national targets to reduce carbon emissions by 60 per cent by 2050 from the 1990 level. Hybrid buses are taken seriously as a next step toward that goal.

More information: [Press release](#)

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